

REMARKS

Claims 87 and 89-90 remain pending in this application. Claim 88 is cancelled herein. Claims 1-86 are previously cancelled. Claim 87 is amended to clarify the invention and to address matters of form unrelated to substantive patentability issues.

Applicants herein traverse and respectfully request reconsideration of the rejection of the claims cited in the above-referenced Office Action.

Claim 87 is objected to for a noted informality. The informality is corrected. Withdrawal of the objection is respectfully requested.

Claims 87, 88 and 90 are rejected under 35 U.S.C. § 102(b) as being anticipated by Nakamura (JP 2001-321825 of JP '825). Applicants herein respectfully traverse these rejections. "Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, *arranged as in the claim.*" **Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.**, 221 USPQ 481, 485 (Fed. Cir. 1984) (emphasis added). It is respectfully submitted that the cited reference is deficient with regard to the following.

Claim 87 is amended, and now recites in pertinent part the following:

turning a metal structure of the metal body into a finer grain structure by forming a low deformation resistance region which traverses the metal body by locally lowering the deformation resistance of a metal body which extends in one direction and by deforming the low deformation resistance region by shearing, said deforming the low deformation resistance region by shearing including imparting rotational motion which allows the rotation of one non-low deformation resistance region relative to another non-low deformation resistance region; forming a non-low deformation resistance region along one side periphery of the low deformation resistance region by increasing the deformation resistance which is lowered in the low deformation resistance region using a non-low deformation resistance region forming device; and performing aging treatment by maintaining the metal body at a temperature which does not turn the metal structure into coarser grain structure in locally lowering the deformation resistance after turning the

metal structure of the metal body into the finer grain
structure

As such, claim 87 now includes a recitation directed to performing aging treatment by maintaining the metal body at a temperature which does not turn the metal structure into coarser grain structure in locally lowering the deformation resistance after turning the metal structure of the metal body into the finer grain structure.

Such a procedure, which is performed after the turning of the metal structure of the metal body into the finer grain structure, can further enhance, by the aging treatment, the strength and the ductility of the metal body which has obtained the high strength and the high ductility by turning the metal structure of the metal body into the finer grain structure.

In this regard, the Examiner states in the Office Action (see page 5, first full paragraph) that “[r]egarding the limitation of aging treatment by maintaining the metal body at a temperature which does not turn the metal structure into coarser grain structure in locally lowering the deformation resistance in claim 88, JP ‘825 teaches that the fine grain metal samples have been pull test under 400°C with remarkable ductility improvement (paragraph [0027] of JP ‘825), which meets the limitation of the instant claim because it is a common knowledge that the microscope of the metal structure strongly relates to the properties of the metal, the high ductility may

correspond to a non-coarse grain structure. This position can further refer to the evidence reference Rosales et al (US 3, 794,528)." However, what paragraph [0027] of JP'825 discloses is, in fact, merely the deformation operation itself for turning metal into finer grain structure at a high temperature of 400°C, and not a subsequent procedure carried out afterwards.

As such, JP '825 neither discloses nor suggests the additionally claimed procedure of performing aging treatment by maintaining the metal body at a temperature (usually a low temperature) which does not turn the metal structure into coarser grain structure in locally lowering the deformation resistance after turning the metal structure of the metal body into the finer grain structure.

Applicants further respectfully submit that Rosales et al. neither discloses nor suggests the claimed feature of "performing aging treatment by maintaining the metal body at a temperature which does not turn the metal structure into coarser grain structure in locally lowering the deformation resistance after turning the metal structure of the metal body into the finer grain structure," and even if it did, could not be used to properly base an anticipation rejection, since all claimed elements/features must be found solely within the four corners of the Nakamura JP '825 reference.

In view of the above, it is respectfully submitted that claims 87 and 90 particularly describe and distinctly claim elements not disclosed in the cited reference. Therefore, reconsideration of the rejections of claims 87 and 90 and their allowance are respectfully requested.

Claim 89 is rejected as obvious over JP '825 in view of Ozawa (US 6,742,374) under 35 U.S.C. §103(a). The applicants herein respectfully traverse this rejection.

Claim 89 now includes the subject matter added to parent claim 87, which subject matter, missing from JP '825, is not adequately supplemented by the disclosure of the secondary Ozawa reference, being offered by the Examiner only for its alleged teaching relating to carburizing treatment. As such, a *prima facie* case of obviousness, which requires that all claimed features are taught or suggested by the combination of applied references, cannot be established in the rejection of the claims as amended. Therefore, reconsideration of the rejections of claim 89 and its allowance are respectfully requested.

Claims 87, 88 and 90 are rejected under the judicially created doctrine of the "obviousness" type double patenting rejection as unpatentable over claims 1-20 of Appl. Ser. No. 12/002,951, now U.S. Patent No. 7,559,221 B2.

Applicants can find nothing in claims 1-20 of the cited reference which even mentions the claimed subject matter directed to performing aging treatment by maintaining the metal body at a temperature which does not turn the metal structure into coarser grain structure in locally lowering the deformation resistance after turning the metal structure of the metal body into the finer grain structure. Moreover, the Office Action is silent as to where such feature is suggested in the '221 patent.

Therefore, reconsideration of the rejections of claims 87, 88 and 90 and their allowance are respectfully requested.

Claim 89 is rejected under the judicially created doctrine of the "obviousness" type double patenting rejection as unpatentable over claims 1-20 of Appl. Ser. No. 12/002,951, now U.S. Patent No. 7,559,221 B2, in view of Ozawa.

Now that the subject matter of claim 88 is incorporated in rejected claim 89, applicants respectfully submit that the combination of the '221 patent and Ozawa fails to teach or suggest all claim limitation, since the secondary Ozawa reference, being offered by the Examiner only for its alleged teaching relating to carburizing treatment, fails to adequately supplement the teachings missing in the '221 patent as discussed above relative to claims 87, 88 and 90. Therefore, reconsideration of the rejections of claim 89 and its allowance are respectfully requested.

Claims 87, 88 and 90 are rejected under the judicially created doctrine of the "obviousness" type double patenting rejection as unpatentable over claims 1-35 of Appl. Ser. No. 10/529,807, now claims 1-4 of U.S. Patent No. 7,637,136 B2.

Applicants can find nothing in claims 1-20 of the cited reference which even remotely suggests the claimed subject matter directed to performing aging treatment by maintaining the metal body at a temperature which does not turn the metal structure into coarser grain structure in locally lowering the deformation resistance after turning the metal structure of the metal body into the finer grain structure. Moreover, the Office Action is silent as to where such feature is suggested in the

'136 patent. Therefore, reconsideration of the rejections of claims 87, 88 and 90 and their allowance are respectfully requested.

Claims 89 is rejected under the judicially created doctrine of the "obviousness" type double patenting rejection as unpatentable over claims 1-35 of Appl. Ser. No. 10/529,807, now claims 1-4 of U.S. Patent No. 7,637,136 B2. in view of Ozawa.

Now that the subject matter of claim 88 is incorporated in rejected claim 89, applicants respectfully submit that the combination of the '136 patent and Ozawa fails to teach or suggest all claim limitation, since the secondary Ozawa reference, being offered by the Examiner only for its alleged teaching relating to carburizing treatment, fails to adequately supplement the teachings missing in the '136 patent as discussed relative to claims 87, 88 and 90. Therefore, reconsideration of the rejections of claim 89 and its allowance are respectfully requested.

No fee is believed due. If there is any fee due the USPTO is hereby authorized to charge such fee to Deposit Account No. 10-1250.

In light of the foregoing, the application is now believed to be in proper form for allowance of all claims and notice to that effect is earnestly solicited.

Respectfully submitted,
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